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THE WORLD'S FIRST SOCIOLOGICAL LABORATORY.

OLD EDINBURGH was a city set on a hill. From the castle to the palace, the main street of the old city runs along the top of a ridge which was left between two deep grooves caused by glacial action. The location of the city on the ridge was due to the presence of the castle built on the precipitous rocks at its western end. The thoroughfare from the castle on the heights gradually descends to Holyrood Palace, and has been the scene of storied pageants without number. No city in western Europe is richer in historical associations; still the city of Edinburgh is no more remarkable than its topography, and is indeed dependent on the latter.

Professor Geddes, speaking of the permanence of physical characteristics, says: "What was decided among the prehistoric protozoa cannot be annulled by act of Parliament." With equal truth it may be said, the destiny of Edinburgh carved out in the ice age may be aided or retarded, but cannot be obliterated, by the deed of man. The history of its civilization is recorded in the progress from the warlike castle on the rocks, along the descending thoroughfare, to the domestic palace in the peaceful valley at the foot of Salisbury Crags.

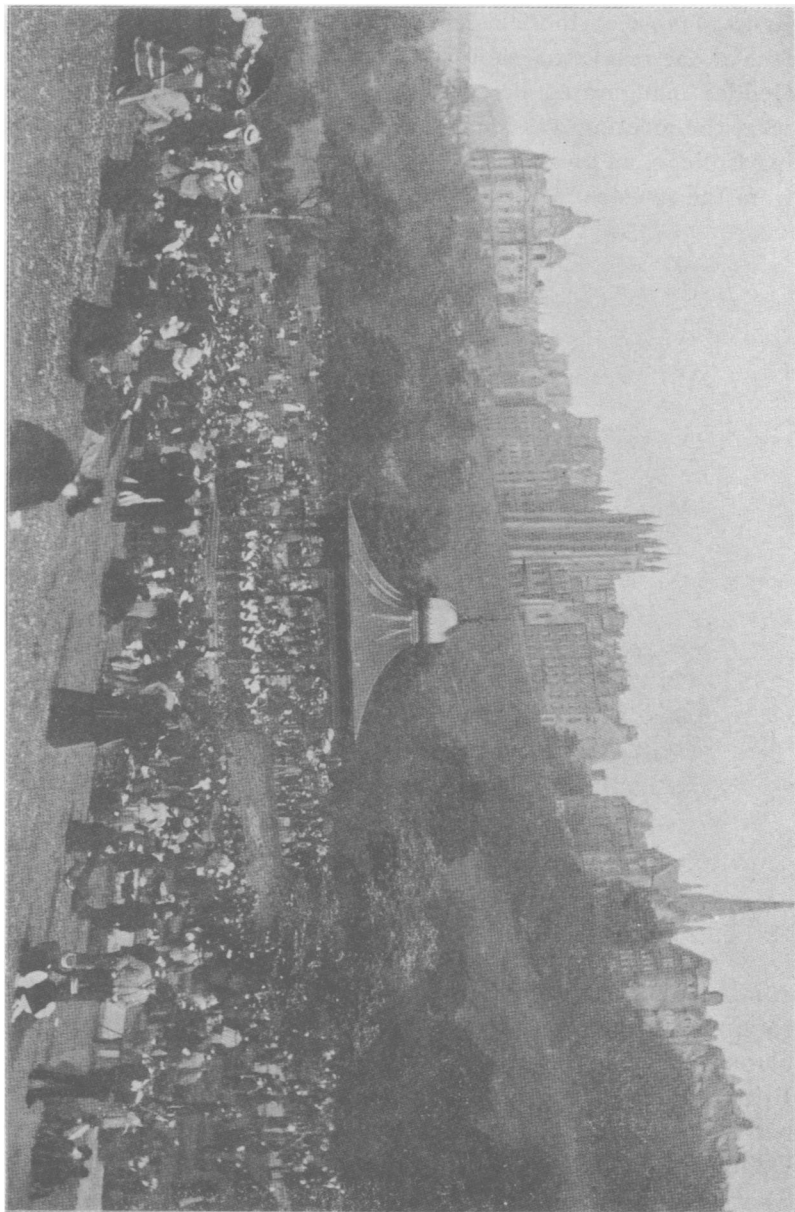
"Even thus, methinks, a city reared should be,
Yea, an imperial city that might hold
Five times a hundred noble towns in fee
Thus should her towers be raised; with vicinage
Of clear bold hills, that curve her very streets,
As if to indicate, 'mid choicest seats
Of Art, abiding Nature's majesty."

If one were to choose a point on the main street near the castle, where he could see the city, old and new, spread out before him, he could read, not merely the chronicle of Edinburgh, but the history of civilization. Such a point has, in fact, been chosen by one of the pioneers in modern sociological investigation and social activity.

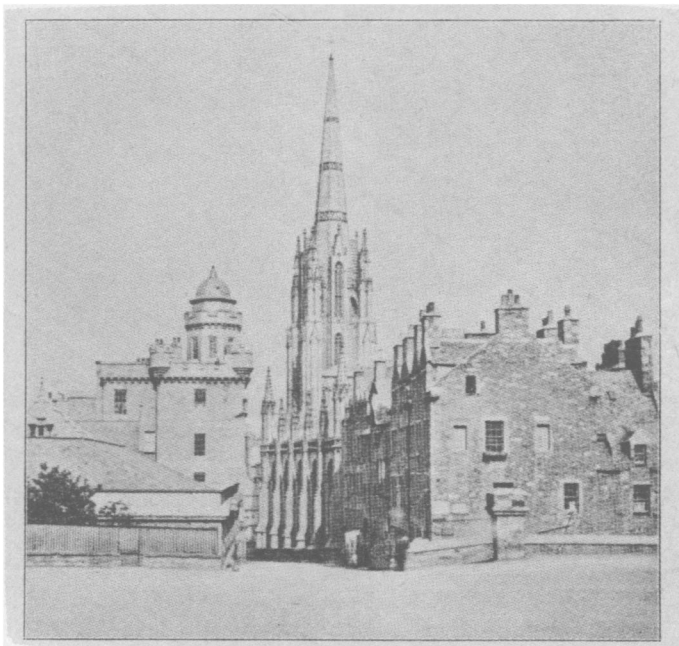
As early as 1887 one might walk along the great central artery of Old Edinburgh, and, passing in through a narrow close, enter one of the dingy courts, which give access to the tall buildings that line this ancient street. Ascending three flights of dark stairs, almost feeling one's way, one might knock at the door which admitted to the apartments of Professor and Mrs. Geddes. After the gloomy climb to step within the well-adorned rooms was a pleasure, but to pass to the windows was to enjoy a scene bewildering, both in its surprise and its charm. The ascent of three flights on the southern side of the building had given one an elevation or eight stories on the northern front, on account of the steepness of the hill on which the buildings are located. And the picture framed by this seemingly magic casement was of Princes Gardens immediately before the windows, edged with the splendidity of the famed Princes street, lying on the slope which leads down to the Firth of Forth, beyond whose cool and blue waters rise the proud Scottish highlands. This panorama of natural grandeur and beauty, second only to the scene from the castle, is typical, too, of the commanding intellectual survey which is made possible by the effort of Professor Geddes, who here, in 1887, established a university hall.

The beginning of this social work seems to date from the organization in 1886 of a summer meeting, which included in that year only courses in seaside zoölogy and garden botany. The next year there was added a course in the theory of evolution; the three following years, in the classes held at Granton Marine Station, near Edinburgh, the attendance continually increasing, botany and zoölogy continued to be the chief subjects of instruction. In 1889 and 1890 the application of the idea of evolution to social as well as biological studies consti-

PRINCES GARDENS AND OLD EDINBURGH — BUILDINGS OF THE TOWN AND GOWN ASSOCIATION ON THE RIGHT



tuted a central course of lectures, delivered by Professor Geddes. In 1891 most of the classes were held in Edinburgh, near the first of the residential houses for students with which Professor Geddes inaugurated his university hall project. From 1893 till 1895 the meeting was held in the Normal School of the Training College, and was assisted in its work by grants of money from the town council. The number of courses offered has been



THE OUTLOOK TOWER

continually increased, especially in philosophy, sociology, history, and geography. There have participated in the meetings, among many others, such well-known educators from Great Britain and the continent as J. Arthur Thomson and A. J. Herbertson, of Edinburgh; J. K. Ingram and A. C. Haddon, of Dublin; Lloyd Morgan, of Bristol; Richard G. Moulton, of Chicago; Ernst Grosse, of Freiburg; Elisée Reclus, of Belgium; Edmond Demolins and Paul Desjardins, of Paris; Henry Dyer,

of Glasgow; Professor Rein, of Jena; Professor Wenley, of Ann Arbor. A typical program follows:

A. GENERAL COURSES.

- 9-10. *Contemporary Social Evolution*. Twenty lectures. Professor Geddes.
 10-11. *History and Principles of the Sciences*. Twenty lectures.
 (Studios and sloyd workshop open throughout the day.)

B. SECTION OF EDUCATION.
 SOCIAL SCIENCE, AND HUMAN-
 ITIES.

- 10-11. *Modern History*. Twenty lectures. Mr. Victor Branford.
 12-1. *La Science Sociale*. Ten lectures by M. Demolins (first half).
La Renaissance Morale de la France au Temps Présent. Two lectures by M. Desjardins (second half).
 2-4. *Seminars of Practical Economics* (Professor Geddes); *History* (Mr. Branford); *Education* (Miss Newcomb); and ten lessons in *Elocution* by Miss Etka Glyn.
 8-9. Weekly Musical Recitals by Mrs. Kennedy-Fraser and Mrs. Geddes.
 Several Literary Recitals by Miss Etka Glyn.

B. SECTION OF NATURAL SCIENCE.

- 10-11. *Comparative Psychology*. Ten lectures. Professor Lloyd Morgan (first half).
Hygiene. Ten lectures. Dr. Louis Irvine (second half).
 11-12. *Biology*. Twenty lectures. Mr. J. Arthur Thomson and Mr. Norman Wyld.
 12-1. *Practical Botany* (including field work). Twenty meetings. Mr. Robert Turnbull.
Field Geology. Ten excursions. Mr. Wyld (first half).
Practical Zoölogy (at Marine Station). Twenty meetings. Mr. Thomson.
 8-9. *Edinburgh and Neighborhood*. A regional survey. Twelve lectures.

The curriculum has expanded until it includes the most interesting synthesis of studies to be found anywhere. This year it somewhat changed its character by laying stress on the study of modern languages; next summer the old methods are to be restored, with the modern languages added. The educational purpose may be stated in the words of Professor Geddes:

Starting from the familiar idea of working from the concrete to the abstract, from the senses toward the intellect, it is attempted in each subject

of study (1) to freshen the student's mind by a wealth of impressions ; (2) to introduce him to the advancing literature of the subject ; (3) to supply him with the means of summarizing, arranging, and more clearly thinking out these accumulations of observation and reading. Hence (1) the insistence upon demonstrations, experiment, and field excursions ; (2) the introduction in several subjects of the seminar, which, with its guidance to the world of books and activity in using them, is so marked a strength of the German university ; (3) the extended use of graphic methods.

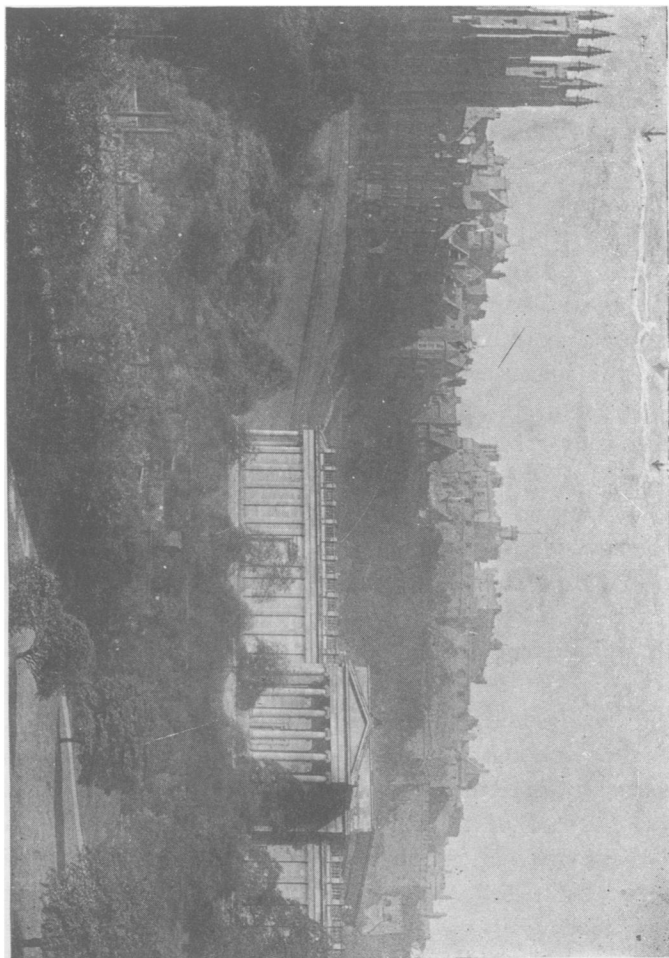
The student, though first of all freshened as an observer, is regarded, not as a receptacle for information, but as a possible producer of independent thought. Hence the examination method, everywhere falling into such merited disrepute, is here definitely abandoned ; a keener stimulus, even a more satisfactory test of progress, being found in accustoming the student to take part in his own education, by attention first to the increase and systematization of his materials, next to the occasional contribution of his best results to the common stock of class notes and summaries, and thence to fuller collaboration with his teacher.

Passing from the manner to the matter of education, it is attempted not merely (1) to offer a series of special courses, each of adequate thoroughness, but (2) to keep up as far as possible a parallelism of treatment, and (3) to coördinate these courses into a larger whole. Hence the general courses addressed to all students, dealing especially with the history of civilization, the historical development of the sciences, their general principles and mutual relations. The present scheme is, in fact, an attempt to work in theory toward the organization of knowledge and in practice toward the more rational arrangement of curricula of study.

The legitimate claim of the man of science is affirmed by the very existence and method of these courses ; yet the corresponding claim of the scholar and humanist that, whatever be the progress of natural science, the study of man must remain supreme, is also recognized — witness that subordination of biology to social science which is a characteristic feature.

Therefore, the work of Professor Geddes has included, not merely a synthesis of studies, but also, and logically, a correlation of activities.

In May, 1887, three small flats housed the first seven students in the first university hall. The absence of dormitories in the Scotch universities was part of the reason for this endeavor, and is one explanation of its growth. Other flats were taken, and still the number of students increased, until it was possible to begin the construction of independent buildings to house the little colony. Year by year the numbers grew, until provision



THE MOUND, OLD EDINBURGH, AND THE CASTLE

has been gradually made, not only for housing a hundred or more students and a little Bohemia of artists, literary and other professional people, but also for the rebuilding of the old town of Edinburgh bit by bit. Over five hundred thousand dollars have been expended in the improvement of nearly forty tenements and closes, with the consequence of both sanitary and æsthetic improvement, and without alteration of the organic character of this historical region. No portion of this sum has been obtained by gift or loan without interest; but a moderate return, averaging $4\frac{1}{2}$ per cent., has uniformly been paid upon the capital invested in Professor Geddes' lands. At length, in 1896, the Town and Gown Association was organized by the initiative of Professor Geddes, and larger schemes are developing. If the philosophy of education, according to Professor Geddes, is to imply the necessary connection of studies and activities, it is also to include the development of studies as the consequence of activities. The crystallization of all this effort in easily visible form is to be seen in the Outlook Tower.

The Outlook Tower was originally a popular observatory. It commands even finer views of Edinburgh than are to be obtained from the castle, and for the best use of these it is surmounted by a *camera obscura*, originally constructed for purely commercial purposes, now the culmination of this new scientific institute. The ascent of the tower provides one with a cyclopædia, the descent, a laboratory.

Although constructed on the scientific method of proceeding from the known to the unknown, the near to the distant, if we begin with the ascent of the tower we should see first the final product of this method, graphic representations of the entire world. So, logically to follow the method, we must start from the top, but in ascending we may glance at the results. Professor Geddes says: "The intellectual tradition of Edinburgh is not only of education, but of publication; not only of abstract philosophy, but also very largely of concrete encyclopædias (Britannica, Chambers', etc.); notably, also, of atlases, maps, and gazetteers. Unusually rich and complete in all the elements of a regional survey, it is also interested in world survey, and, if

less proportionately important in the practical world than of old, it has become more widely connected with the old than ever—witness the proverbially wide dispersion of Scotsmen over England and the empire, through America, and, indeed, through the whole world. . . . This regional Outlook Tower is thus itself a regional product ; although its principle is easily adaptable to every region, as that of an encyclopædia may be used anywhere.” We begin, therefore, with our encyclopædia, not, however, in print, but in graphic form, including not simply organized data, but mutually related facts. In the basement we find the results, not only of the processes carried on above, but also classifications of the arts and sciences, from Aristotle or Bacon to Comte and Spencer, and we incidentally have light thrown on the intellectual development of the presiding genius here. Comte is among the intellectual ancestors of Professor Geddes, as are Le Play and others who have attempted a correlation of the facts of life. Here we find an appeal made to students of all the arts and sciences, the floors above being of interest, primarily, to the sociologist. Successive floors give us, in chart, in plan, in photograph and sketch, the whole of Europe, the empire, Scotland, Edinburgh and the immediate neighborhood.

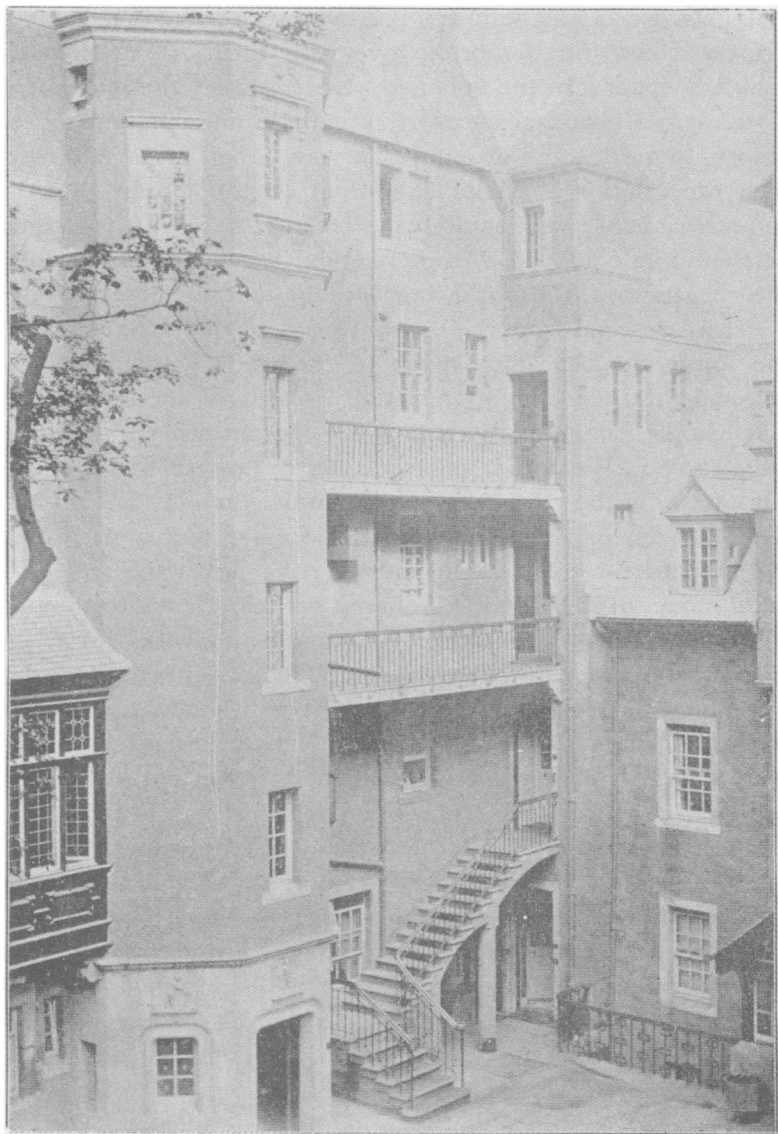
We shall find it more profitable to begin a careful inspection of the tower at the very summit, where is situated the *camera obscura*.

This instrument combines for the sociologist the advantages of the astronomical observatory and the microscopical laboratory. One sees both near and distant things. One has a wider field of view than can be enjoyed by the naked eye, and at the same time finds more beautiful landscape thrown on the table by the elimination of some of the discordant rays of light. One sees at once with the scientist's and the artist's eye. The great purpose of the *camera obscura* is to teach right methods of observation, to unite the æsthetic pleasure and artistic appreciation with which observation begins, and which should be habitual before any scientific analysis is entered upon, with the synthetic attitude to which every analysis should

return. In this little dome, the light admitted only from above, whence by reflection it throws the images of the outer world on the round, white table, we begin a study of Old Edinburgh. As the table turns, we may see successively the magnificent new group of buildings immediately to the west of the tower, now taken over by the Town and Gown Association ; beyond these, the esplanade, the castle, and portions of the new city, as well as an ancient approach to the old, the Grass Market. To the south, as the table revolves, we may examine minutely in the foreground Heriot's Hospital, Greyfriars' Church, the Royal Infirmary, and, less and less closely, the Meadows, the public golf links, and the Pentlands beyond. Looking to the east, one sees the rare significance of this location. The tower is situated on the north side of the great thoroughfare of Old Edinburgh. One looks down this narrow, high-walled slum street, where history is written in every old residence, in St. Giles' Church, Parliament House, and numberless other historic monuments, until in the distance one sees Holyrood Palace, Salisbury Crags, and Arthur's Seat. To the north stretches the unique panorama which includes Princes Gardens and Princes street, and, with their public institutions, the Mound and Calton Hill. Beyond the new town of Edinburgh and its port, Leith, stretches the Firth of Forth ; and, on a clear day, the highlands may be seen.

“ Traced like a map the landscape lies
In cultured beauty stretching wide ;
There Pentland's green acclivities ;
There Ocean with its azure tide ;
There Arthur's Seat ; and gleaming through
Thy Southern wing, Dunedin blue !
While in the Orient Lammer's daughters,
A distant giant range, are seen,
North Berwick Law with cone of green,
And Bass amid the waters.”

In this physical environment the sociologist finds every variety of modern life, from the worst of Scotch slums at his feet, under the shadow of a majestic military stronghold, past the seats of ecclesiastical and political authority to the former



A BIT OF UNIVERSITY HALL — ALLAN RAMSAY'S COTTAGE ON THE RIGHT

home of royalty ; or, through such types of modern commercial activity as the railway in Princes Gardens, the shops in Princes street, and the bridge over the Firth of Forth, to the simple shepherds of the uplands. He sees, also, the monuments of modern arts and sciences, from gallery, museum, and observatory, to garden and hospital ; nor can he fail to be impressed with the relation of social conditions to topography. If one can learn to observe accurately in watching these shifting scenes, he should be equipped with the method by which he may study the geography of the world, and, through that, social institutions.

If we descend from the *camera obscura* to the turreted roof of the tower, we may enjoy much of the vision without artificial aid, and with a deeper appreciation because of the significance given to the panorama by its previous concentration on the small table above. We fortify ourselves for our return to earth by a cup of tea in the tower tea rooms, and begin our descent with the story devoted to Edinburgh. Here we find a permanent synthesis of the passing pageant we have just witnessed. The relief model of the city of Edinburgh carries us back to the time antecedent to all the present buildings, and, with the aid of charts and pictures, we have little difficulty in tracing history, beginning with the first castle walls, and continuing to the renewal of Old and the extension of New Edinburgh. Indeed, we find on this floor evidences that the tower is not only scientific, but practical. The plans for rejuvenating the old city, as undertaken by Professor Geddes and his colleagues, are here in evidence. In his words : " The interests of archæology and public health, of æsthetics and finance, of the housing of the people, and of the collegiate beginnings of the academic community, are here, as far as may be, reconciled in actual practice."

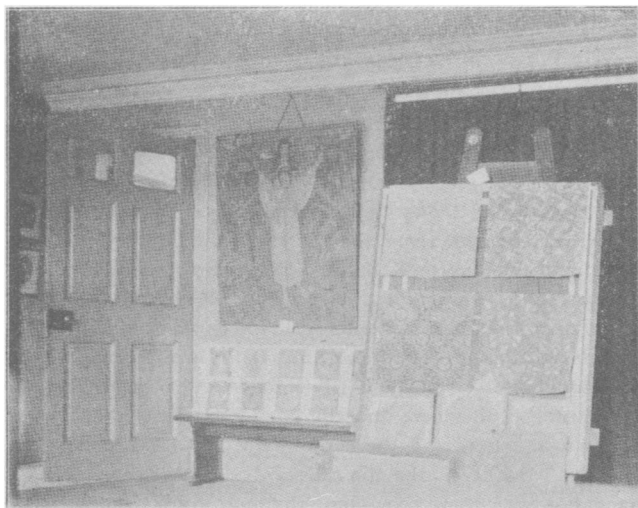
The story below is devoted to Scotland. On the floor is a huge map, conforming to the points of the compass, so that one may easily orient himself. The walls also are covered with graphic representations of the topography, the history, and the social conditions of Scotland, from the occupations of the primitive highlander to the great commercial and naval undertakings of the Firth and Clyde ship canal. The possibilities of the labo-

ratory study of sociology may be shown in connection with this department of the Outlook Tower by a passage in which Professor Geddes illustrates the significance of topography in the case of the popular sport we have imported from Scotland :

Everyone has his own ideas about Scotland ; has heard, let us say, more or less of the romantic aspect and associations of Edinburgh, or of the industrial intensity and world-wide commerce of Glasgow ; he has heard, too, of golf at St. Andrews, of sport in the highlands, and of yachting on the west coast. Shooting on moor and mountain, sailing on the great sea lochs, are obviously intelligible ; but taking St. Andrews and golf as a somewhat less obvious example, why should this be so developed ? What is the explanation of the preëminence of this little town, and what has enabled it to popularize its characteristic game almost more fully and widely than even Oxford and Cambridge theirs of rowing ? What has made its club "royal and ancient" and given it a metropolitan authority excelling that of the Marylebone Cricket Club in its way ? Why should this be ? There certainly are sand dunes with a grassy margin — links, as they call them. But these links stretch more or less along the eastern coasts of Scotland and England, and from northern France along the shores of the Netherlands and Prussia up to Finland and the innermost Baltic — a long field for St. Andrews ! Consider first, why should we find golf on such a soil ? Watch first the blowing sand, and see what holds it — the strong blue lyme grass, which rambles with its long creeping stems and tough roots among the sand. But for this, the sand would travel inland indefinitely, destroying whole fields and parishes in its progress ; as, for that matter, it does here and there. Upon these half-fixed dunes the wind still blows, and here and there blows out holes large and small which give the famous "bunkers," the main hazards of the game. Over the more fixed surface, however, there soon come the finer grasses eaten by sheep, and so the sheep itself, and with the sheep the shepherd. This fringe of pasture is narrow, else we should have a pastoral civilization ; but here in western Europe this can be no more than a broken fringe ; no migratory pastoral families, much less a great patriarchal one, is possible ; the shepherd remains at the simplest level, scarcely distinct from the ordinary agricultural population. He retains its type, and instead of contemplating indefinitely like the Eastern, he needs something to do. His sheep are not the sole possessors of the pasture ; the dry sandy soil and grass are suited admirably also to the rabbit both for its burrow and its pasture. As the shepherd goes along, he knocks now and then a stone into a rabbit hole with his crook. Having put the stone in — it is a white one — he fishes it out again, and drives it on to another hole. He idles away his hour and also invents the game of golf.

We see then the origin of golf and its relation to the links ; but why to St. Andrews in particular ? Here is a university town, with remote position, and no mountain, river, or other athletic resources. Its whole resources are

those of the sea and of golf upon the far-reaching moor. The student, often originally himself a shepherd, takes most naturally to the game, and becomes more expert in it than the working shepherds or others have time to be, and the inventive and mechanical townsman improves both "club" and "ball." He carries on the game through youth and age; at last he writes of it with enthusiasm; in every way he diffuses it, by and by from London as journalist and politician. But for centuries every St. Andrews man has been more or less of a Balfour or an Andrew Lang. (*The Co-operative Wholesale Societies' Annual*, 1895, article on "Education for Economics and Citizenship, and the Place of History and Geography in This," pp. 485-529.)



DESIGNS BY THE OLD EDINBURGH SCHOOL OF ART

Leaving the Scottish division of the tower, we reach the story below Scotland, which is devoted to the empire, and to an alcove for the United States. Here one finds an incipient record of the English-speaking world, and indication of the inclusiveness of the project. The descent of another flight of steps brings us to Europe. Again we may see the combination of the scientific and the practical, in the record of Professor Geddes' recent experiments in Cyprus, which he chose as "a geographical and historic, racial and social microcosm; and as a unique region which, while practically a portion of the colonial empire,

at once unites many of the most characteristic developments and problems of the old world, since still, as of old, linking Europe with Asia, and both, through Egypt, even with Africa," and which we may choose as typical of the province of this department of the Outlook Tower. Professor Geddes has not only gathered here some remarkable graphic evidences of conditions in Cyprus, and utilized this material in his lectures and publications, but he has organized (again on business lines, similar to those of the Town and Gown Association) a society for the development of the island, the methods being not those of bounty, nor protection, nor enforced coöperation, but the development of the soil, and the reconstitution of the forests.

There still remains a story devoted to the world, as yet but little developed, waiting for the consummation of the plans of Professor Reclus for the great globe, which was to have been erected for the Paris exhibition of 1900, had time allowed. Not discouraged, Professors Reclus and Geddes are now combining their respective and complementary schemes of globe and tower into that of a complete geographical exhibition, which may be arranged in Paris, in Great Britain, or in America, as circumstances may determine, or if possible reduplicated in all — with smaller regional museums, or outlook towers, for different cities, and with minor outlines adapted to geographical education in colleges and even schools.

The Outlook Tower is not only a museum and laboratory for the Edinburgh summer meeting and the occasional student; it is the center for a school of geography, the Town and Gown Association, the Old Edinburgh School of Art, and a publishing department through which "Patrick Geddes and Colleagues" have issued some beautiful books contributing to the Celtic renaissance in literature and art, the significance of which has been explained in one of these publications, *The Evergreen*:

Industrial initiative and artistic life are reappearing, and each where it was most needed, the first amid this ice-pack of frozen culture [Edinburgh], the latter in our western inferno of industry [Glasgow]. Architecture, too, is renascent; the work of the past dozen years will, on the whole, bear comparison with anything in English or continental cities, in a few cases may even

challenge it, and in at least one case, that of the noble Academic Aula of Edinburgh, carry the challenge back to the best days of the Renaissance. The current resuscitation of Old Edinburgh, more unnoticed just because more organic, is hence a still deeper sign. First came the opening up of the cathedral, the rebuilding of the city cross, then of the castle gates and Parliament Hall. Now the old courts and closes from Holyrood to Castlehill are slowly but steadily changing, and amid what was and is the most dense and dire confusion of material and human wreck and misery in Europe, we have every here and there some spark of art, some strenuous beginning of civic sanitation, some group of healthy homes of workman and student, of rich and poor, some slight but daily strengthening reunion of democracy with culture; and this in no parliamentary and abstract sense, but in the civic and concrete one.

The Edinburgh School of Art has been equally successful in reviving old Celtic designs and discovering new Celtic artists, but it is a marvel to the visitor to find how much of their activity is due to the inspiration of the scientist Patrick Geddes. Whether in his own apartments, in the university halls, in the historical procession to be the crowning art work of the castle hill, or in the architectural improvement of the old town, everywhere is seen the hand of the master. The redemption of Cyprus and the teaching of botany at Dundee, the reconstruction of Edinburgh and the printing of books, the teaching of art and the scientific collections of the Outlook Tower, are all reconciled in the personality of the man to whom synthesis is the chief function of contemporary science. He has said: "While our studies are nothing if not historical, they must begin with the present day, and the past be seen by help of the present; while our studies are nothing if not geographical, they must begin at our own doors; and while nothing if not scientific, they must still begin with art!"

The Outlook Tower, at once school, museum, atelier, and observatory, may fitly be called the world's first sociological laboratory.

CHARLES ZUEBLIN.

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